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CLAIMS

1. A radio telephony network (1) supporting at least one link of a radio channel (6) for a packet data transmission service and comprising a plurality of network controllers (RNC), each network controller (RNC) being connected via an interface (I<sub>ub</sub>) to at least one base radio station (B-node), said base radio station (B-node) supervising at least one macrocell (5a), characterized in that it additionally comprises at least one base radio microstation (B1-micronode) connected to the network controller (RNC) via an interface (I<sub>ub</sub>) of the same type as that connecting said base radio station (B-node) to the network controller (RNC), said at least one base radio microstation (B1-micronode) supervising at least one microcell (5b) incorporated in at least one macrocell (5a) and centered at a point different from the point at which said macrocell (5a) is centered, said at least one base radio microstation (B1-micronode) providing said packet data transmission service in said microcell (5b) on at least one link of said radio channel (6).

2. The network as claimed in claim 1, characterized in that said at least one base radio microstation (B1-micronode) provides said packet data transmission service by using a multi-carrier radio access.

3. The network as claimed in claim 2, characterized in that said multi-carrier radio access is of the OFDM type.

4. The network as claimed in any one of the preceding claims, characterized in that each base radio microstation (B1-micronode) comprises a central switch (SW) and a plurality of access ports AP connected to said central switch (SW) by a cable (C<sub>v</sub>).

5. The network as claimed in any one of the preceding claims, characterized in that each base radio

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microstation (B1-micronode) comprises a protocol structure including a first protocol level (L1) and a second protocol level (L2) located above said first protocol level (L1), said first protocol level (L1) being a physical level and said second protocol level (L2) being a data transmission level.

6. The network as claimed in claim 5, characterized in that said first protocol level (L1) includes circuit components for processing a multi-carrier radio signal, said multi-carrier radio signal being formed from a plurality of radio carriers associated with data to be transmitted.

7. The network as claimed in claim 6, characterized in that said circuit components for processing said multi-carrier radio signal comprise dedicated circuits and/or programmable DSPs.

8. The network as claimed in any one of claims 5 to 7, characterized in that said data transmission level (L2) comprises an access control sub-level (MAC) including a logical entity (B1-MAC-OFDM) for controlling said multi-carrier radio access.

9. The network as claimed in claim 8, characterized in that said logical entity (B1-MAC-OFDM) maps logical channels on transport channels.

10. The network as claimed in any one of claims 8 to 9, characterized in that said logical entity (B1-MAC-OFDM) implements functions of retransmission of incorrectly received data packets.

11. The network as claimed in any one of claims 8 to 10, characterized in that said logical entity (B1-MAC-OFDM) implements scheduling functions.

12. The network as claimed in any one of claims 8 to 11, characterized in that said access control sub-level (MAC) comprises a frame protocol (B1-OFDM-FP) for controlling the transport of said multi-carrier radio signal between said base radio microstation (B1-

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micronode) and the network controller (RNC) connected to it.

13. The network as claimed in claim 12, characterized in that said central switch (SW) comprises said logical entity (B1-MAC-OFDM) and said frame protocol (B1-OFDM-FP), and in that each of said access ports (AP) comprises said first protocol level (L1) including said circuit components for processing said multi-carrier radio signal.

14. The network as claimed in any one of claims 6 to 13, characterized in that each network controller (RNC) comprises an access control sub-level (MAC) comprises a frame protocol (RNC-OFDM-FP) for controlling the transport of said multi-carrier radio signal within said network controller (RNC) or between said network controller (RNC) and the base radio microstation (B1-micronode) connected to it.

15. The network as claimed in any one of claims 6 to 14, characterized in that said at least one base radio microstation (B1-micronode) can provide said packet data transmission service to at least one user equipment (UE) located in the microcell (5b) served by said base radio microstation (B1-micronode), said user equipment (UE) having a protocol structure including a physical level (L1) comprising circuit components for demodulating said multi-carrier radio signal.

16. The network as claimed in any one of the preceding claims, characterized in that said at least one link of said radio channel (6) is a downlink.

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